Paras   1632

Serial Number: 09/479,467A   **ENTERED**   CRF Processing Date: 9/26/2000
                                                                Edited by: _____
                                                                Verified by: _____ (STIC staff)

- [ ] Changed a file from non-ASCII to ASCII

- [ ] Changed the margins in cases where the sequence text was "wrapped" down to the next line.

RECEIVED
OCT 0 4 2000

- [ ] Edited a format error in the Current Application Data section, specifically:
  _____

- [ ] Edited the Current Application Data section with the actual current number. The number inputted by the applicant was [ ] the prior application data; or [ ] other _____.

- [ ] Added the mandatory heading and subheadings for "Current Application Data".

- [ ] Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.

- [ ] Changed the spelling of a mandatory field (the headings or subheadings), specifically:
  _____

- [ ] Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:
  _____

- [ ] Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:
  _____

- [ ] Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.

- [ ] Inserted colons after headings/subheadings. Headings edited included:
  _____

- [x] Deleted extra, invalid, headings used by an applicant, specifically:
  duplicate C1407 and C1417

- [ ] Deleted: [ ] non-ASCII "garbage" at the beginning/end of files; [ ] secretary initials/filename at end of file; [ ] page numbers throughout text; [ ] other invalid text, such as_____.

- [ ] Inserted mandatory headings, specifically: _____

- [ ] Corrected an obvious error in the response, specifically:
  _____

- [ ] Edited identifiers where upper case is used but lower case is required, or vice versa.

- [ ] Corrected an error in the Number of Sequences field, specifically:
  _____

- [ ] A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.

- [ ] Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____

- [x] Other: _Sequence 2 - fixed amino acid numbering_
  _____
  _____
  _____

*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.   3/1/95

1632

RAW SEQUENCE LISTING   DATE: 09/26/2000
PATENT APPLICATION: US/09/479,467A   TIME: 15:01:58

Input Set : A:\2919bseq.001
Output Set: N:\CRF3\09262000\I479467A.raw

*Does Not Comply
Corrected Diskette Needed*

```
     3  <110> APPLICANT: Sternberg, Paul W.
     4         Barr, Maureen M.
     6  <120> TITLE OF INVENTION: POLYCYSTIC KIDNEY DISEASE GENE HOMOLOGS REQUIRED FOR MALE MATING
     7         BEHAVIOR IN NEMATODES AND ASSAYS BASED THEREON
     9  <130> FILE REFERENCE: 18021-2901B
C--> 11  <140> CURRENT APPLICATION NUMBER: US/09/479,467A
C--> 12  <141> CURRENT FILING DATE: 2000-01-06
    14  <150> PRIOR APPLICATION NUMBER: 09/479,467
    15  <151> PRIOR FILING DATE: 2000-01-06
    17  <150> PRIOR APPLICATION NUMBER: 60/115,127
    18  <151> PRIOR FILING DATE: 1999-01-06
    20  <160> NUMBER OF SEQ ID NOS: 16
    22  <170> SOFTWARE: PatentIn Ver. 2.0


ERRORED SEQUENCES

  1111  <210> SEQ ID NO: 2
  1112  <211> LENGTH: 4303
  1113  <212> TYPE: PRT
  1114  <213> ORGANISM: Homo sapiens PKD-1 protein
  1116  <400> SEQUENCE: 2
  1117  Met Pro Pro Ala Ala Pro Ala Arg Leu Ala Leu Ala Leu Gly Leu Gly
  1118   1               5                   10                  15
  1120  Leu Trp Leu Gly Ala Leu Ala Gly Gly Pro Gly Arg Gly Cys Gly Pro
  1121              20                  25                  30
  1123  Cys Glu Pro Pro Cys Leu Cys Gly Pro Ala Pro Gly Ala Ala Cys Arg
  1124          35                  40                  45
  1126  Val Asn Cys Ser Gly Arg Gly Leu Arg Thr Leu Gly Pro Ala Leu Arg
  1127          50                  55                  60
  1129  Ile Pro Ala Asp Ala Thr Glu Leu Asp Val Ser His Asn Leu Leu Arg
  1130   65                  70                  75                  80
  1132  Ala Leu Asp Val Gly Leu Leu Ala Asn Leu Ser Ala Leu Ala Glu Leu
  1133              85                  90                  95
  1135  Asp Ile Ser Asn Asn Lys Ile Ser Thr Leu Glu Glu Gly Ile Phe Ala
  1136             100                 105                 110
  1138  Asn Leu Phe Asn Leu Ser Glu Ile Asn Leu Ser Gly Asn Pro Phe Glu
  1139             115                 120                 125
  1141  Cys Asp Cys Gly Leu Ala Trp Leu Pro Gln Trp Ala Glu Glu Gln Gln
  1142         130                 135                 140
  1144  Val Arg Val Val Gln Pro Glu Ala Ala Thr Cys Ala Gly Pro Gly Ser
  1145  145                 150                 155                 160
  1147  Leu Ala Gly Gln Pro Leu Leu Gly Ile Pro Leu Leu Asp Ser Gly Cys
  1148             165                 170                 175
  1150  Gly Glu Glu Tyr Val Ala Cys Leu Pro Asp Asn Ser Ser Gly Thr Val
  1151             180                 185                 190
  1153  Ala Ala Val Ser Phe Ser Ala Ala His Glu Gly Leu Leu Gln Pro Glu
```

```
1154          195                 200                 205
1156   Ala Cys Ser Ala Phe Cys Phe Ser Thr Gly Gln Gly Leu Ala Ala Leu
1157       210                 215                 220
1159   Ser Glu Gln Gly Trp Cys Leu Cys Gly Ala Ala Gln Pro Ser Ser Ala
1160   225                 230                 235                 240
1162   Ser Phe Ala Cys Leu Ser Leu Cys Ser Gly Pro Pro Ala Pro Pro Ala
1163               245                 250                 255
1165   Pro Thr Cys Arg Gly Pro Thr Leu Leu Gln His Val Phe Pro Ala Ser
1166               260                 265                 270
1168   Pro Gly Ala Thr Leu Val Gly Pro His Gly Pro Leu Ala Ser Gly Gln
1169               275                 280                 285
1171   Leu Ala Ala Phe His Ile Ala Ala Pro Leu Pro Val Thr Asp Thr Arg
1172       290                 295                 300
1174   Trp Asp Phe Gly Asp Gly Ser Ala Glu Val Asp Ala Ala Gly Pro Ala
1175   305                 310                 315                 320
1177   Ala Ser His Arg Tyr Val Leu Pro Gly Arg Tyr His Val Thr Ala Val
1178               325                 330                 335
1180   Leu Ala Leu Gly Ala Gly Ser Ala Leu Leu Gly Thr Asp Val Gln Val
1181               340                 345                 350
1183   Glu Ala Ala Pro Ala Ala Leu Glu Leu Val Cys Pro Ser Ser Val Gln
1184       355                 360                 365
1186   Ser Asp Glu Ser Leu Asp Leu Ser Ile Gln Asn Arg Gly Gly Ser Gly
1187       370                 375                 380
1189   Leu Glu Ala Ala Tyr Ser Ile Val Ala Leu Gly Glu Glu Pro Ala Arg
1190   385                 390                 395                 400
1192   Ala Val His Pro Leu Cys Pro Ser Asp Thr Glu Ile Phe Pro Gly Asn
1193               405                 410                 415
1195   Gly His Cys Tyr Arg Leu Val Val Glu Lys Ala Ala Trp Leu Gln Ala
1196               420                 425                 430
1198   Gln Glu Gln Cys Gln Ala Trp Ala Gly Ala Ala Leu Ala Met Val Asp
1199               435                 440                 445
1201   Ser Pro Ala Val Gln Arg Phe Leu Val Ser Arg Val Thr Arg Ser Leu
1202       450                 455                 460
1204   Asp Val Trp Ile Gly Phe Ser Thr Val Gln Gly Val Glu Val Gly Pro
1205   465                 470                 475                 480
1207   Ala Pro Gln Gly Glu Ala Phe Ser Leu Glu Ser Cys Gln Asn Trp Leu
1208               485                 490                 495
1210   Pro Gly Glu Pro His Pro Ala Thr Ala Glu His Cys Val Arg Leu Gly
1211               500                 505                 510
1213   Pro Thr Gly Trp Cys Asn Thr Asp Leu Cys Ser Ala Pro His Ser Tyr
1214               515                 520                 525
1216   Val Cys Glu Leu Gln Pro Gly Gly Pro Val Gln Asp Ala Glu Asn Leu
1217       530                 535                 540
1219   Leu Val Gly Ala Pro Ser Gly Asp Leu Gln Gly Pro Leu Thr Pro Leu
1220   545                 550                 555                 560
1222   Ala Gln Gln Asp Gly Leu Ser Ala Pro His Glu Pro Val Glu Val Met
1223               565                 570                 575
1225   Val Phe Pro Gly Leu Arg Leu Ser Arg Glu Ala Phe Leu Thr Thr Ala
1226               580                 585                 590
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/479,467A

DATE: 09/26/2000
TIME: 15:01:59

Input Set : A:\2919bseq.001
Output Set: N:\CRF3\09262000\I479467A.raw

```
1228   Glu Phe Gly Thr Gln Glu Leu Arg Arg Pro Ala Gln Leu Arg Leu Gln
1229           595             600             605
1231   Val Tyr Arg Leu Leu Ser Thr Ala Gly Thr Pro Glu Asn Gly Ser Glu
1232       610             615             620
1234   Pro Glu Ser Arg Ser Pro Asp Asn Arg Thr Gln Leu Ala Pro Ala Cys
1235   625             630             635                         640
1237   Met Pro Gly Gly Arg Trp Cys Pro Gly Ala Asn Ile Cys Leu Pro Leu
1238               645             650                     655
1240   Asp Ala Ser Cys His Pro Gln Ala Cys Ala Asn Gly Cys Thr Ser Gly
1241           660             665             670
1243   Pro Gly Leu Pro Gly Ala Pro Tyr Ala Leu Trp Arg Glu Phe Leu Phe
1244           675             680             685
1246   Ser Val Pro Ala Gly Pro Pro Ala Gln Tyr Ser Val Thr Leu His Gly
1247       690             695             700
1249   Gln Asp Val Leu Met Leu Pro Gly Asp Leu Val Gly Leu Gln His Asp
1250   705             710             715                         720
1252   Ala Gly Pro Gly Ala Leu Leu His Cys Ser Pro Ala Pro Gly His Pro
1253               ·725            730                     735
1255   Gly Pro Arg Ala Pro Tyr Leu Ser Ala Asn Ala Ser Ser Trp Leu Pro
1256               740             745             750
1258   His Leu Pro Ala Gln Leu Glu Gly Thr Trp Gly Cys Pro Ala Cys Ala
1259           755             760             765
1261   Leu Arg Leu Leu Ala Gln Arg Glu Gln Leu Thr Val Leu Leu Gly Leu
1262       770             775             780
1264   Arg Pro Asn Pro Gly Leu Arg Leu Pro Gly Arg Tyr Glu Val Arg Ala
1265   785             790             795                         800
1267   Glu Val Gly Asn Gly Val Ser Arg His Asn Leu Ser Cys Ser Phe Asp
1268               805             810                     815
1270   Val Val Ser Pro Val Ala Gly Leu Arg Val Ile Tyr Pro Ala Pro Arg
1271               820             825             830
1273   Asp Gly Arg Leu Tyr Val Pro Thr Asn Gly Ser Ala Leu Val Leu Gln
1274           835             840             845
1276   Val Asp Ser Gly Ala Asn Ala Thr Ala Thr Ala Arg Trp Pro Gly Gly
1277       850             855             860
1279   Ser Leu Ser Ala Arg Phe Glu Asn Val Cys Pro Ala Leu Val Ala Thr
1280   865             870             875                         880
1282   Phe Val Pro Ala Cys Pro Trp Glu Thr Asn Asp Thr Leu Phe Ser Val
1283               885             890                     895
1285   Val Ala Leu Pro Trp Leu Ser Glu Gly Glu His Val Val Asp Val Val
1286               900             905             910
1288   Val Glu Asn Ser Ala Ser Arg Ala Asn Leu Ser Leu Arg Val Thr Ala
1289           915             920             925
1291   Glu Glu Pro Ile Cys Gly Leu Arg Ala Thr Pro Ser Pro Glu Ala Arg
1292       930             935             940
1294   Val Leu Gln Gly Val Leu Val Arg Tyr Ser Pro Val Val Glu Ala Gly
1295   945             950             955                         960
1297   Ser Asp Met Val Phe Arg Trp Thr Ile Asn Asp Lys Gln Ser Leu Thr
1298               965             970                     975
1300   Phe Gln Asn Val Val Phe Asn Val Ile Tyr Gln Ser Ala Ala Val Phe
```

```
     1301            980              985              990
     1303   Lys Leu Ser Leu Thr Ala Ser Asn His Val Ser Asn Val Thr Val Asn
     1304            995             1000             1005
     1306   Tyr Asn Val Thr Val Glu Arg Met Asn Arg Met Gln Gly Leu Gln Val
     1307           1010             1015             1020
     1309   Ser Thr Val Pro Ala Val Leu Ser Pro Asn Ala Thr Leu Ala Leu Thr
E--> 1310  (025) /025           1030             1035             1040
     1312   Ala Gly Val Leu Val Asp Ser Ala Val Glu Val Ala Phe Leu Trp Thr
     1313           1045             1050             1055
     1315   Phe Gly Asp Gly Glu Gln Ala Leu His Gln Phe Gln Pro Pro Tyr Asn
     1316           1060             1065             1070
     1318   Glu Ser Phe Pro Val Pro Asp Pro Ser Val Ala Gln Val Leu Val Glu
     1319           1075             1080             1085
     1321   His Asn Val Thr His Thr Tyr Ala Ala Pro Gly Glu Tyr Leu Leu Thr
     1322           1090             1095             1100
     1324   Val Leu Ala Ser Asn Ala Phe Glu Asn Leu Thr Gln Gln Val Pro Val
E--> 1325  (105)             1110             1115             1120
     1327   Ser Val Arg Ala Ser Leu Pro Ser Val Ala Val Gly Val Ser Asp Gly
     1328           1125             1130             1135
     1330   Val Leu Val Ala Gly Arg Pro Val Thr Phe Tyr Pro His Pro Leu Pro
     1331           1140             1145             1150
     1333   Ser Pro Gly Gly Val Leu Tyr Thr Trp Asp Phe Gly Asp Gly Ser Pro
     1334           1155             1160             1165
     1336   Val Leu Thr Gln Ser Gln Pro Ala Ala Asn His Thr Tyr Ala Ser Arg
     1337       1170             1175             1180
     1339   Gly Thr Tyr His Val Arg Leu Glu Val Asn Asn Thr Val Ser Gly Ala
E--> 1340  (185)             1190             1195             1200
     1342   Ala Ala Gln Ala Asp Val Arg Val Phe Glu Glu Leu Arg Gly Leu Ser
     1343           1205             1210             1215
     1345   Val Asp Met Ser Leu Ala Val Glu Gln Gly Ala Pro Val Val Val Ser
     1346           1220             1225             1230
     1348   Ala Ala Val Gln Thr Gly Asp Asn Ile Thr Trp Thr Phe Asp Met Gly
     1349           1235             1240             1245
     1351   Asp Gly Thr Val Leu Ser Gly Pro Glu Ala Thr Val Glu His Val Tyr
     1352       1250             1255             1260
     1354   Leu Arg Ala Gln Asn Cys Thr Val Thr Val Gly Ala Gly Ser Pro Ala
E--> 1355  (265)             1270             1275             1280
     1357   Gly His Leu Ala Arg Ser Leu His Val Leu Phe Val Leu Glu Val
     1358           1285             1290             1295
     1360   Leu Arg Val Glu Pro Ala Ala Cys Ile Pro Thr Gln Pro Asp Ala Arg
     1361           1300             1305             1310
     1363   Leu Thr Ala Tyr Val Thr Gly Asn Pro Ala His Tyr Leu Phe Asp Trp
     1364       1315             1320             1325
     1366   Thr Phe Gly Asp Gly Ser Ser Asn Thr Thr Val Arg Gly Cys Pro Thr
     1367       1330             1335             1340
     1369   Val Thr His Asn Phe Thr Arg Ser Gly Thr Phe Pro Leu Ala Leu Val
E--> 1370  (345)             1350             1355             1360
     1372   Leu Ser Ser Arg Val Asn Arg Ala His Tyr Phe Thr Ser Ile Cys Val
     1373           1365             1370             1375
```

```
     1375  Glu Pro Glu Val Gly Asn Val Thr Leu Gln Pro Glu Arg Gln Phe Val
     1376            1380             1385             1390
     1378  Gln Leu Gly Asp Glu Ala Trp Leu Val Ala Cys Ala Trp Pro Pro Phe
     1379           1395             1400             1405
     1381  Pro Tyr Arg Tyr Thr Trp Asp Phe Gly Thr Glu Glu Ala Ala Pro Thr
     1382     1410             1415             1420
     1384  Arg Ala Arg Gly Pro Glu Val Thr Phe Ile Tyr Arg Asp Pro Gly Ser
E--> 1385  425             1430             1435             1440
     1387  Tyr Leu Val Thr Val Thr Ala Ser Asn Asn Ile Ser Ala Ala Asn Asp
     1388              1445             1450             1455
     1390  Ser Ala Leu Val Glu Val Gln Glu Pro Val Leu Val Thr Ser Ile Lys
     1391           1460             1465             1470
     1393  Val Asn Gly Ser Leu Gly Leu Glu Leu Gln Gln Pro Tyr Leu Phe Ser
     1394           1475             1480             1485
     1396  Ala Val Gly Arg Gly Arg Pro Ala Ser Tyr Leu Trp Asp Leu Gly Asp
     1397     1490             1495             1500
     1399  Gly Gly Trp Leu Glu Gly Pro Glu Val Thr His Ala Tyr Asn Ser Thr
E--> 1400  505             1510             1515             1520
     1402  Gly Asp Phe Thr Val Arg Val Ala Gly Trp Asn Glu Val Ser Arg Ser
     1403              1525             1530              1535
     1405  Glu Ala Trp Leu Asn Val Thr Val Lys Arg Arg Val Arg Gly Leu Val
     1406      '      1540             1545             1550
     1408  Val Asn Ala Ser Arg Thr Val Val Pro Leu Asn Gly Ser Val Ser Phe
     1409           1555             1560             1565
     1411  Ser Thr Ser Leu Glu Ala Gly Ser Asp Val Arg Tyr Ser Trp Val Leu
     1412     1570             1575             1580
     1414  Cys Asp Arg Cys Thr Pro Ile Pro Gly Gly Thr Ile Ser Tyr Thr
E--> 1415  585             1590             1595             1600
     1417  Phe Arg Ser Val Gly Thr Phe Asn Ile Ile Val Thr Ala Glu Asn Glu
     1418              1605             1610             1615
     1420  Val Gly Ser Ala Gln Asp Ser Ile Phe Val Tyr Val Leu Gln Leu Ile
     1421              1620             1625             1630
     1423  Glu Gly Leu Gln Val Val Gly Gly Gly Arg Tyr Phe Pro Thr Asn His
     1424           1635             1640             1645
     1426  Thr Val Gln Leu Gln Ala Val Val Arg Asp Gly Thr Asn Val Ser Tyr
     1427     1650             1655             1660
     1429  Ser Trp Thr Ala Trp Arg Asp Arg Gly Pro Ala Leu Ala Gly Ser Gly
E--> 1430  665             1670             1675             1680
     1432  Lys Gly Phe Ser Leu Thr Val Leu Glu Ala Gly Thr Tyr His Val Gln
     1433              1685        ·       1690             1695
     1435  Leu Arg Ala Thr Asn Met Leu Gly Ser Ala Trp Ala Asp Cys Thr Met
     1436        ·   1700             1705             1710
     1438  Asp Phe Val Glu Pro Val Gly Trp Leu Met Val Ala Ala Ser Pro Asn
     1439       1715             1720             1725
     1441  Pro Ala Ala Val Asn Thr Ser Val Thr Leu Ser Ala Glu Leu Ala Gly
     1442     1730             1735             1740
     1444  Gly Ser Gly Val Val Tyr Thr Trp Ser Leu Glu Glu Gly Leu Ser Trp
E--> 1445  745             1750             1755             1760
     1447  Glu Thr Ser Glu Pro Phe Thr Thr His Ser Phe Pro Thr Pro Gly Leu
```

```
        1448              1765              1770              1775
        1450   His Leu Val Thr Met Thr Ala Gly Asn Pro Leu Gly Ser Ala Asn Ala
        1451         1780              1785              1790
        1453   Thr Val Glu Val Asp Val Gln Val Pro Val Ser Gly Leu Ser Ile Arg
        1454         1795              1800              1805
        1456   Ala Ser Glu Pro Gly Gly Ser Phe Val Ala Ala Gly Ser Ser Val Pro
        1457      1810              1815              1820
        1459   Phe Trp Gly Gln Leu Ala Thr Gly Thr Asn Val Ser Trp Cys Trp Ala
E--> 1460   825              1830              1835              1840
        1462   Val Pro Gly Gly Ser Ser Lys Arg Gly Pro His Val Thr Met Val Phe
        1463              1845              1850              1855
        1465   Pro Asp Ala Gly Thr Phe Ser Ile Arg Leu Asn Ala Ser Asn Ala Val
        1466         1860              1865              1870
        1468   Ser Trp Val Ser Ala Thr Tyr Asn Leu Thr Ala Glu Glu Pro Ile Val
        1469         1875              1880              1885
        1471   Gly Leu Val Leu Trp Ala Ser Ser Lys Val Val Ala Pro Gly Gln Leu
        1472      1890              1895              1900
        1474   Val His Phe Gln Ile Leu Leu Ala Ala Gly Ser Ala Val Thr Phe Arg
        1475 1905              1910              1915              1920
        1477   Leu Gln Val Gly Gly Ala Asn Pro Glu Val Leu Pro Gly Pro Arg Phe
        1478         1925              1930              1935
        1480   Ser His Ser Phe Pro Arg Val Gly Asp His Val Val Ser Val Arg Gly
        1481      1940              1945              1950
        1483   Lys Asn His Val Ser Trp Ala Gln Ala Gln Val Arg Ile Val Val Leu
        1484      1955              1960              1965
        1486   Glu Ala Val Ser Gly Leu Gln Val Pro Asn Cys Cys Glu Pro Gly Ile
        1487      1970              1975              1980
        1489   Ala Thr Gly Thr Glu Arg Asn Phe Thr Ala Arg Val Gln Arg Gly Ser
E--> 1490   985              1990              1995              2000
        1492   Arg Val Ala Tyr Ala Trp Tyr Phe Ser Leu Gln Lys Val Gln Gly Asp
        1493         2005              2010              2015
        1495   Ser Leu Val Ile Leu Ser Gly Arg Asp Val Thr Tyr Thr Pro Val Ala
        1496         2020              2025              2030
        1498   Ala Gly Leu Leu Glu Ile Gln Val Arg Ala Phe Asn Ala Leu Gly Ser
        1499      2035              2040              2045
        1501   Glu Asn Arg Thr Leu Val Leu Glu Val Gln Asp Ala Val Gln Tyr Val
        1502      2050              2055              2060
        1504   Ala Leu Gln Ser Gly Pro Cys Phe Thr Asn Arg Ser Ala Gln Phe Glu
E--> 1505   065              2070              2075              2080
        1507   Ala Ala Thr Ser Pro Ser Pro Arg Arg Val Ala Tyr His Trp Asp Phe
        1508         2085              2090              2095
        1510   Gly Asp Gly Ser Pro Gly Gln Asp Thr Asp Glu Pro Arg Ala Glu His
        1511         2100              2105              2110
        1513   Ser Tyr Leu Arg Pro Gly Asp Tyr Arg Val Gln Val Asn Ala Ser Asn
        1514      2115              2120              2125
        1516   Leu Val Ser Phe Phe Val Ala Gln Ala Thr Val Thr Val Gln Val Leu
        1517      2130              2135              2140
        1519   Ala Cys Arg Glu Pro Glu Val Asp Val Val Leu Pro Leu Gln Val Leu
E--> 1520   145              2150              2155              2160
```

RAW SEQUENCE LISTING   DATE: 09/26/2000
PATENT APPLICATION: US/09/479,467A   TIME: 15:01:59

Input Set : A:\2919bseq.001
Output Set: N:\CRF3\09262000\I479467A.raw

```
       1522  Met Arg Arg Ser Gln Arg Asn Tyr Leu Glu Ala His Val Asp Leu Arg
       1523            2165            2170            2175
       1525  Asp Cys Val Thr Tyr Gln Thr Glu Tyr Arg Trp Glu Val Tyr Arg Thr
       1526        2180            2185            2190
       1528  Ala Ser Cys Gln Arg Pro Gly Arg Pro Ala Arg Val Ala Leu Pro Gly
       1529        2195            2200            2205
       1531  Val Asp Val Ser Arg Pro Arg Leu Val Leu Pro Arg Leu Ala Leu Pro
       1532        2210            2215            2220
       1534  Val Gly His Tyr Cys Phe Val Phe Val Val Ser Phe Gly Asp Thr Pro
E-->   1535  225             2230            2235            2240
       1537  Leu Thr Gln Ser Ile Gln Ala Asn Val Thr Val Ala Pro Glu Arg Leu
       1538            2245            2250            2255
       1540  Val Pro Ile Ile Glu Gly Gly Ser Tyr Arg Val Trp Ser Asp Thr Arg
       1541            2260            2265            2270
       1543  Asp Leu Val Leu Asp Gly Ser Glu Ser Tyr Asp Pro Asn Leu Glu Asp
       1544        2275            2280            2285
       1546  Gly Asp Gln Thr Pro Leu Ser Phe His Trp Ala Cys Val Ala Ser Thr
       1547        2290            2295            2300
       1549  Gln Arg Glu Ala Gly Gly Cys Ala Leu Asn Phe Gly Pro Arg Gly Ser
E-->   1550  305             2310            2315            2320
       1552  Ser Thr Val Thr Ile Pro Arg Glu Arg Leu Ala Ala Gly Val Glu Tyr
       1553            2325            2330            2335
       1555  Thr Phe Ser Leu Thr Val Trp Lys Ala Gly Arg Lys Glu Glu Ala Thr
       1556            2340            2345            2350
       1558  Asn Gln Thr Val Leu Ile Arg Ser Gly Arg Val Pro Ile Val Ser Leu
       1559        2355            2360            2365
       1561  Glu Cys Val Ser Cys Lys Ala Gln Ala Val Tyr Glu Val Ser Arg Ser
       1562        2370            2375            2380
       1564  Ser Tyr Val Tyr Leu Glu Gly Arg Cys Leu Asn Cys Ser Ser Gly Ser
E-->   1565  385             2390            2395            2400
       1567  Lys Arg Gly Arg Trp Ala Ala Arg Thr Phe Ser Asn Lys Thr Leu Val
       1568            2405            2410            2415
       1570  Leu Asp Glu Thr Thr Thr Ser Thr Gly Ser Ala Gly Met Arg Leu Val
       1571            2420            2425            2430
       1573  Leu Arg Arg Gly Val Leu Arg Asp Arg Gly Glu Gly Tyr Thr Phe Thr Leu
       1574        2435            2440            2445
       1576  Thr Val Leu Gly Arg Ser Gly Glu Glu Glu Gly Cys Ala Ser Ile Arg
       1577        2450            2455            2460
       1579  Leu Ser Pro Asn Arg Pro Pro Leu Gly Gly Ser Cys Arg Leu Phe Pro
E-->   1580  465             2470            2475            2480
       1582  Leu Gly Ala Val His Ala Leu Thr Thr Lys Val His Phe Glu Cys Thr
       1583            2485            2490            2495
       1585  Gly Trp His Asp Ala Glu Asp Ala Gly Ala Pro Leu Val Tyr Ala Leu
       1586        2500            2505            2510
       1588  Leu Leu Arg Arg Cys Arg Gln Gly His Cys Glu Glu Cys Val Tyr
       1589        2515            2520            2525
       1591  Lys Gly Ser Leu Ser Ser Tyr Gly Ala Val Leu Pro Pro Gly Phe Arg
       1592        2530            2535            2540
       1594  Pro His Phe Glu Val Gly Leu Ala Val Val Val Gln Asp Gln Leu Gly
```

RAW SEQUENCE LISTING   DATE: 09/26/2000
PATENT APPLICATION: US/09/479,467A   TIME: 15:01:59

Input Set : A:\2919bseq.001
Output Set: N:\CRF3\09262000\I479467A.raw

```
E--> 1595 545               2550              2555              2560
     1597 Ala Ala Val Val Ala Leu Asn Arg Ser Leu Ala Ile Thr Leu Pro Glu
     1598               2565              2570              2575
     1600 Pro Asn Gly Ser Ala Thr Gly Leu Thr Val Trp Leu His Gly Leu Thr
     1601           2580              2585              2590
     1603 Ala Ser Val Leu Pro Gly Leu Leu Arg Gln Ala Asp Pro Gln His Val
     1604           2595              2600              2605
     1606 Ile Glu Tyr Ser Leu Ala Leu Val Thr Val Leu Asn Glu Tyr Glu Arg
     1607      2610              2615              2620
     1609 Ala Leu Asp Val Ala Ala Glu Pro Lys His Glu Arg Gln His Arg Ala
E--> 1610 625               2630              2635              2640
     1612 Gln Ile Arg Lys Asn Ile Thr Glu Thr Leu Val Ser Leu Arg Val His
     1613           2645              2650              2655
     1615 Thr Val Asp Asp Ile Gln Gln Ile Ala Ala Ala Leu Ala Gln Cys Met
     1616           2660              2665              2670
     1618 Gly Pro Ser Arg Glu Leu Val Cys Arg Ser Cys Leu Lys Gln Thr Leu
     1619           2675              2680              2685
     1621 His Lys Leu Glu Ala Met Met Leu Ile Leu Gln Ala Glu Thr Thr Ala
     1622      2690              2695              2700
     1624 Gly Thr Val Thr Pro Thr Ala Ile Gly Asp Ser Ile Leu Asn Ile Thr
E--> 1625 705               2710              2715              2720
     1627 Gly Asp Leu Ile His Leu Ala Ser Ser Asp Val Arg Ala Pro Gln Pro
     1628           2725              2730              2735
     1630 Ser Glu Leu Gly Ala Glu Ser Pro Ser Arg Met Val Ala Ser Gln Ala
     1631           2740              2745              2750
     1633 Tyr Asn Leu Thr Ser Ala Leu Met Arg Ile Leu Met Arg Ser Arg Val
     1634           2755              2760              2765
     1636 Leu Asn Glu Glu Pro Leu Thr Leu Ala Gly Glu Glu Ile Val Ala Gln
     1637      2770              2775              2780
     1639 Gly Lys Arg Ser Asp Pro Arg Ser Leu Leu Cys Tyr Gly Gly Ala Pro
E--> 1640 785               2790              2795              2800
     1642 Gly Pro Gly Cys His Phe Ser Ile Pro Glu Ala Phe Ser Gly Ala Leu
     1643           2805              2810              2815
     1645 Ala Asn Leu Ser Asp Val Val Gln Leu Ile Phe Leu Val Asp Ser Asn
     1646           2820              2825              2830
     1648 Pro Phe Pro Phe Gly Tyr Ile Ser Asn Tyr Thr Val Ser Thr Lys Val
     1649      2835              2840              2845
     1651 Ala Ser Met Ala Phe Gln Thr Gln Ala Gly Ala Gln Ile Pro Ile Glu
     1652      2850              2855              2860
     1654 Arg Leu Ala Ser Glu Arg Ala Ile Thr Val Lys Val Pro Asn Asn Ser
E--> 1655 865               2870              2875              2880
     1657 Asp Trp Ala Ala Arg Gly His Arg Ser Ser Ala Asn Ser Ala Asn Ser
     1658           2885              2890              2895
     1660 Val Val Val Gln Pro Gln Ala Ser Val Gly Ala Val Val Thr Leu Asp
     1661           2900              2905              2910
     1663 Ser Ser Asn Pro Ala Ala Gly Leu His Leu Gln Leu Asn Tyr Thr Leu
     1664      2915              2920              2925
     1666 Leu Asp Gly His Tyr Leu Ser Glu Glu Pro Glu Pro Tyr Leu Ala Val
     1667      2930              2935              2940
```

```
      1669  Tyr Leu His Ser Glu Pro Arg Pro Asn Glu His Asn Cys Ser Ala Ser
E--> 1670  945            2950            2955            2960
      1672  Arg Arg Ile Arg Pro Glu Ser Leu Gln Gly Ala Asp His Arg Pro Tyr
      1673            2965            2970            2975
      1675  Thr Phe Phe Ile Ser Pro Gly Ser Arg Asp Pro Ala Gly Ser Tyr His
      1676        2980            2985            2990
      1678  Leu Asn Leu Ser Ser His Phe Arg Trp Ser Ala Leu Gln Val Ser Val
      1679        2995            3000            3005
      1681  Gly Leu Tyr Thr Ser Leu Cys Gln Tyr Phe Ser Glu Glu Asp Met Val
      1682        3010            3015            3020
      1684  Trp Arg Thr Glu Gly Leu Leu Pro Leu Glu Glu Thr Ser Pro Arg Gln
E--> 1685  025            3030            3035            3040
      1687  Ala Val Cys Leu Thr Arg His Leu Thr Ala Phe Gly Ala Ser Leu Phe
      1688            3045            3050            3055
      1690  Val Pro Pro Ser His Val Arg Phe Val Phe Pro Glu Pro Thr Ala Asp
      1691            3060            3065            3070
      1693  Val Asn Tyr Ile Val Met Leu Thr Cys Ala Val Cys Leu Val Thr Tyr
      1694        3075            3080            3085
      1696  Met Val Met Ala Ala Ile Leu His Lys Leu Asp Gln Leu Asp Ala Ser
      1697        3090           ·3095            3100
      1699  Arg Gly Arg Ala Ile Pro Phe Cys Gly Gln Arg Gly Arg Phe Lys Tyr
E--> 1700  105            3110            3115            3120
      1702  Glu Ile Leu Val Lys Thr Gly Trp Gly Arg Gly Ser Gly Thr Thr Ala
      1703            3125            3130            3135
      1705  His Val Gly Ile Met Leu Tyr Gly Val Asp Ser Arg Ser Gly His Arg
      1706        3140            3145            3150
      1708  His Leu Asp Gly Asp Arg Ala Phe His Arg Asn Ser Leu Asp Ile Phe
      1709        3155            3160            3165
      1711  Arg Ile Ala Thr Pro His Ser Leu Gly Ser Val Trp Lys Ile Arg Val
      1712        3170            3175            3180
      1714  Trp His Asp Asn Lys Gly Leu Ser Pro Ala Trp Phe Leu Gln His Val
E--> 1715  185            3190            3195            3200
      1717  Ile Val Arg Asp Leu Gln Thr Ala Arg Ser Ala Phe Phe Leu Val Asn
      1718            3205            3210            3215
      1720  Asp Trp Leu Ser Val Glu Thr Glu Ala Asn Gly Gly Leu Val Glu Lys
      1721        3220            3225            3230
      1723  Glu Val Leu Ala Ala Ser Asp Ala Ala Leu Leu Arg Phe Arg Arg Leu
      1724        3235            3240            3245
      1726  Leu Val Leu Ala Glu Leu Gln Arg Gly Phe Phe Asp Lys His Ile Trp Leu
      1727        3250            3255            3260
      1729  Ser Ile Trp Asp Arg Pro Pro Arg Ser Arg Phe Thr Arg Ile Gln Arg
E--> 1730  265            3270            3275            3280
      1732  Ala Thr Cys Cys Val Leu Leu Ile Cys Leu Phe Leu Gly Ala Asn Ala
      1733            3285            3290            3295
      1735  Val Trp Tyr Gly Ala Val Gly Asp Ser Ala Tyr Ser Thr Gly His Val
      1736        3300            3305            3310
      1738  Ser Arg Leu Ser Pro Leu Ser Val Asp Thr Val Ala Val Gly Leu Val
      1739        3315            3320            3325
      1741  Ser Ser Val Val Val Tyr Pro Val Tyr Leu Ala Ile Leu Phe Leu Phe
```

RAW SEQUENCE LISTING   DATE: 09/26/2000
PATENT APPLICATION: US/09/479,467A   TIME: 15:01:59

Input Set : A:\2919bseq.001
Output Set: N:\CRF3\09262000\I479467A.raw

```
        1742    3330                3335                3340
        1744    Arg Met Ser Arg Ser Lys Val Ala Gly Ser Pro Ser Pro Thr Pro Ala
E-->    1745    345                 3350                3355                3360
        1747    Gly Gln Gln Val Leu Asp Ile Asp Ser Cys Leu Asp Ser Ser Val Leu
        1748                3365                3370                3375
        1750    Asp Ser Ser Phe Leu Thr Phe Ser Gly Leu His Ala Glu Gln Ala Phe
        1751                3380                3385                3390
        1753    Val Gly Gln Met Lys Ser Asp Leu Phe Leu Asp Asp Ser Lys Ser Leu
        1754            3395                3400                3405
        1756    Val Cys Trp Pro Ser Gly Glu Gly Thr Leu Ser Trp Pro Asp Leu Leu
        1757            3410                3415                3420
        1759    Ser Asp Pro Ser Ile Val Gly Ser Asn Leu Gln Leu Ala Arg Gly
E-->    1760    425                 3430                3435                3440
        1762    Gln Ala Gly His Gly Leu Gly Pro Glu Glu Asp Gly Phe Ser Leu Ala
        1763                3445                3450                3455
        1765    Ser Pro Tyr Ser Pro Ala Lys Ser Phe Ser Ala Ser Asp Glu Asp Leu
        1766            3460                3465                3470
        1768    Ile Gln Gln Val Leu Ala Glu Gly Val Ser Ser Pro Ala Pro Thr Gln
        1769            3475                3480                3485
        1771    Asp Thr His Met Glu Thr Asp Leu Leu Ser Ser Leu Ser Ser Thr Pro
        1772        3490                3495                3500
        1774    Gly Glu Lys Thr Glu Thr Leu Ala Leu Gln Arg Leu Gly Glu Leu Gly
E-->    1775    505                 3510                3515                3520
        1777    Pro Pro Ser Pro Gly Leu Asn Trp Glu Gln Pro Gln Ala Ala Arg Leu
        1778                3525                3530                3535
        1780    Ser Arg Thr Gly Leu Val Glu Gly Leu Arg Lys Arg Leu Leu Pro Ala
        1781            3540                3545                3550
        1783    Trp Cys Ala Ser Leu Ala His Gly Leu Ser Leu Leu Leu Val Ala Val
        1784        3555                3560                3565
        1786    Ala Val Ala Val Ser Gly Trp Val Gly Ala Ser Phe Pro Pro Gly Val
        1787        3570                3575                3580
        1789    Ser Val Ala Trp Leu Leu Ser Ser Ser Ala Ser Phe Leu Ala Ser Phe
E-->    1790    585                 3590                3595                3600
        1792    Leu Gly Trp Glu Pro Leu Lys Val Leu Leu Glu Ala Leu Tyr Phe Ser
        1793        .           3605                3610                3615
        1795    Leu Val Ala Lys Arg Leu His Pro Asp Glu Asp Thr Leu Val Glu
        1796            3620                3625                3630
        1798    Ser Pro Ala Val Thr Pro Val Ser Ala Arg Val Pro Arg Val Arg Pro
        1799        3635                3640                3645
        1801    Pro His Gly Phe Ala Leu Phe Leu Ala Lys Glu Glu Ala Arg Lys Val
        1802        3650                3655                3660
        1804    Lys Arg Leu His Gly Met Leu Arg Ser Leu Leu Val Tyr Met Leu Phe
E-->    1805    665                 3670                3675                3680
        1807    Leu Leu Val Thr Leu Leu Ala Ser Tyr Gly Asp Ala Ser Cys His Gly
        1808                3685                3690                3695
        1810    His Ala Tyr Arg Leu Gln Ser Ala Ile Lys Gln Glu Leu His Ser Arg
        1811            3700                3705                3710
        1813    Ala Phe Leu Ala Ile Thr Arg Ser Glu Glu Leu Trp Pro Trp Met Ala
        1814        3715                3720                3725
```

```
        1816  His Val Leu Leu Pro Tyr Val His Gly Asn Gln Ser Ser Pro Glu Leu
        1817      3730              3735              3740
        1819  Gly Pro Pro Arg Leu Arg Gln Val Arg Leu Gln Glu Ala Leu Tyr Pro
E-->    1820  745          3750              3755              3760
        1822  Asp Pro Pro Gly Pro Arg Val His Thr Cys Ser Ala Ala Gly Gly Phe
        1823              3765              3770              3775
        1825  Ser Thr Ser Asp Tyr Asp Val Gly Trp Glu Ser Pro His Asn Gly Ser
        1826          3780              3785              3790
        1828  Gly Thr Trp Ala Tyr Ser Ala Pro Asp Leu Leu Gly Ala Trp Ser Trp
        1829          3795              3800              3805
        1831  Gly Ser Cys Ala Val Tyr Asp Ser Gly Gly Tyr Val Gln Glu Leu Gly
        1832      3810              3815              3820
        1834  Leu Ser Leu Glu Glu Ser Arg Asp Arg Leu Arg Phe Leu Gln Leu His
E-->    1835  825          3830              3835              3840
        1837  Asn Trp Leu Asp Asn Arg Ser Arg Ala Val Phe Leu Glu Leu Thr Arg
        1838          3845              3850              3855
        1840  Tyr Ser Pro Ala Val Gly Leu His Ala Ala Val Thr Leu Arg Leu Glu
        1841          3860              3865              3870
        1843  Phe Pro Ala Ala Gly Arg Ala Leu Ala Ala Leu Ser Val Arg Pro Phe
        1844      3875              3880              3885
        1846  Ala Leu Arg Arg Leu Ser Ala Gly Leu Ser Leu Pro Leu Leu Thr Ser
        1847      3890              3895              3900
        1849  Val Cys Leu Leu Leu Phe Ala Val His Phe Ala Val Ala Glu Ala Arg
E-->    1850  905          3910              3915              3920
        1852  Thr Trp His Arg Glu Gly Arg Trp Arg Val Leu Arg Leu Gly Ala Trp
        1853          3925              3930              3935
        1855  Ala Arg Trp Leu Leu Val Ala Leu Thr Ala Ala Thr Ala Leu Val Arg
        1856          3940              3945         •    3950
        1858  Leu Ala Gln Leu Gly Ala Ala Asp Arg Gln Trp Thr Arg Phe Val Arg
        1859          3955              3960              3965
        1861  Gly Arg Pro Arg Arg Phe Thr Ser Phe Asp Gln Val Ala His Val Ser
        1862      3970              3975              3980
        1864  Ser Ala Ala Arg Gly Leu Ala Ala Ser Leu Leu Phe Leu Leu Leu Val
E-->    1865  985          3990              3995              4000
        1867  Lys Ala Ala Gln His Val Arg Phe Val Arg Gln Trp Ser Val Phe Gly
        1868          4005              4010              4015
        1870  Lys Thr Leu Cys Arg Ala Leu Pro Glu Leu Leu Gly Val Thr Leu Gly
        1871          4020              4025              4030
        1873  Leu Val Val Leu Gly Val Ala Tyr Ala Gln Leu Ala Leu Leu Leu Val
        1874          4035              4040              4045
        1876  Ser Ser Cys Val Asp Ser Leu Trp Ser Val Ala Gln Ala Leu Leu Val
        1877      4050              4055              4060
        1879  Leu Cys Pro Gly Thr Gly Leu Ser Thr Leu Cys Pro Ala Glu Ser Trp
E-->    1880  065          4070              4075              4080
        1882  His Leu Ser Pro Leu Leu Cys Val Gly Leu Trp Ala Leu Arg Leu Trp
        1883      .            4085              4090              4095
        1885  Gly Ala Leu Arg Leu Gly Ala Val Ile Leu Arg Trp Arg Tyr His Ala
        1886          4100              4105              4110
        1888  Leu Arg Gly Glu Leu Tyr Arg Pro Ala Trp Glu Pro Gln Asp Tyr Glu
```

```
     1889        4115              4120                4125
     1891  Met Val Glu Leu Phe Leu Arg Arg Leu Arg Leu Trp Met Gly Leu Ser
     1892       4130              4135              4140
     1894  Lys Val Lys Glu Phe Arg His Lys Val Arg Phe Glu Gly Met Glu Pro
E--> 1895  145              4150              4155                4160
     1897  Leu Pro Ser Arg Ser Ser Arg Gly Ser Lys Val Ser Pro Asp Val Pro
     1898            4165              4170              4175
     1900  Pro Pro Ser Ala Gly Ser Asp Ala Ser His Pro Ser Thr Ser Ser Ser
     1901            4180              4185              4190
     1903  Gln Leu Asp Gly Leu Ser Val Ser Leu Gly Arg Leu Gly Thr Arg Cys
     1904       4195              4200              4205
     1906  Glu Pro Glu Pro Ser Arg Leu Gln Ala Val Phe Glu Ala Leu Leu Thr
     1907     4210              4215              4220
     1909  Gln Phe Asp Arg Leu Asn Gln Ala Thr Glu Asp Val Tyr Gln Leu Glu
E--> 1910  225              4230              4235                4240
     1912  Gln Gln Leu His Ser Leu Gln Gly Arg Arg Ser Ser Arg Ala Pro Ala
     1913            4245              4250              4255
     1915  Gly Ser Ser Arg Gly Pro Ser Pro Gly Leu Arg Pro Ala Leu Pro Ser
     1916       4260              4265              4270
     1918  Arg Leu Ala Arg Ala Ser Arg Gly Val Asp Leu Ala Thr Gly Pro Ser
     1919       4275              4280              4285
     1921  Arg Thr Pro Leu Arg Ala Lys Asn Lys Val His Pro Ser Ser Thr
     1922     4290              4295              4300
```

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/479,467A

DATE: 09/26/2000
TIME: 15:02:00

Input Set : A:\2919bseq.001
Output Set: N:\CRF3\09262000\I479467A.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:1310 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2
M:332 Repeated in SeqNo=2